

AMENDMENTS TO THE CLAIMS

Claim 1 (cancelled)

Claim 2 (cancelled)

Claim 3 (currently amended) The transmitter of Claim 2 <sup>2</sup>/~~22~~, wherein the phase detector is further coupled to a reference signal so that the operating frequency of the voltage controlled oscillator is related to the frequency of the reference signal.

Claim <sup>8</sup>/~~4~~ (currently amended) The transmitter of Claim 1 <sup>1</sup>/~~21~~, wherein a power amplifier is coupled between the voltage controlled oscillator and the antenna.

Claim <sup>9</sup>/~~6~~ (original) The transmitter of Claim <sup>8</sup>/~~4~~, wherein the gain of the power amplifier is controlled by a power controller.

Claim <sup>10</sup>/~~6~~ (previously amended) The transmitter of Claim <sup>9</sup>/~~6~~, wherein the power amplifier, the voltage-controlled oscillator, and the power controller are formed on a single integrated circuit.

Claim <sup>4</sup>/~~7~~ (currently amended) The transmitter of Claim 2 <sup>2</sup>/~~22~~, wherein the phase-locked loop further includes a prescalar and a divide-by M circuit coupled between the voltage-controlled oscillator and the phase detector.

Claim <sup>6</sup>/~~6~~ (original) The transmitter of Claim <sup>4</sup>/~~7~~, wherein the voltage controlled oscillator and the phase-locked loop are formed on a single integrated circuit.

Claims 9-13 (cancelled)

Claim <sup>6</sup>~~14~~ (currently amended) The transmitter of Claim ~~2~~<sup>2</sup>~~22~~, further including a reference oscillator supplying a signal of a reference frequency to the phase detector, wherein the reference oscillator, the voltage controlled oscillator, and the phase-locked loop are formed on a single integrated circuit.

Claim <sup>7</sup>~~15~~ (original) The transmitter of Claim <sup>6</sup>~~14~~, wherein the reference oscillator is of the Colpitts variety and is coupled to receive a signal from a timing device external to the single integrated circuit.

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Claim <sup>14</sup>~~16~~ (currently amended) The transmitter of Claim ~~±~~<sup>1</sup>~~21~~, further including a charge pump supplying a voltage to the voltage-controlled oscillator, wherein the charge pump and the voltage-controlled oscillator are formed on a single integrated circuit.

Claim <sup>15</sup>~~17~~ (currently amended) The transmitter of Claim ~~±~~<sup>1</sup>~~21~~, further including a bandgap reference circuit generating reference voltages that are temperature and supply voltage stable, the bandgap reference circuit and the voltage-controlled oscillator formed on a single integrated circuit.

Claim <sup>16</sup>~~18~~ (currently amended) The transmitter of Claim ~~±~~<sup>1</sup>~~21~~, further including a shutdown mode circuit coupled to the voltage-controlled oscillator, the shutdown mode circuit and the voltage-controlled oscillator being formed on a single integrated circuit.

Claim <sup>17</sup>~~19~~ (currently amended) The transmitter of Claim ~~±~~<sup>1</sup>~~21~~, further including a data encoder coupled between a data input

pad and the voltage-controlled oscillator, the data encoder and the voltage-controlled oscillator being formed on a single integrated circuit.

[ Claim 20 (cancelled)

Claim <sup>1</sup>~~21~~ (previously added) A transmitter comprising:  
a voltage-controlled oscillator having an operating frequency;

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an antenna, the antenna forming part of a tuned circuit coupled to the voltage-controlled oscillator,

a differential structure of varactor diodes;

varactor ~~Charge~~ charge pump to provide a bias ~~Charge~~ charge for varactor diodes in the differential structure of varactor diodes; and

a tuned circuit including the antenna and the differential structure of varactor diodes, wherein the differential structure of varactor diodes tunes the resonance point of the antenna to the frequency of the voltage-controlled oscillator.

Claim <sup>2</sup>~~22~~ (previously added) The transmitter of Claim <sup>1</sup>~~21~~, wherein the voltage-controlled oscillator is coupled serially with a phase detector and a loop filter to form a phase-locked loop.

Claim <sup>11</sup>~~23~~ (previously added) The transmitter of Claim <sup>1</sup>~~21~~, wherein the differential structure of varactor diodes, the voltage-controlled oscillator, and the varactor charge pump are formed on a single integrated circuit.

Claim <sup>12</sup>24 (previously added) The transmitter of Claim <sup>1</sup>21,  
wherein the varactor diodes include an array of capacitors that  
can be switched in and out of the tuned circuit.

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Claim <sup>13</sup>25. (previously added) The transmitter of Claim <sup>1</sup>21,  
wherein the differential structure of varactor diodes and the  
voltage-controlled oscillator are formed on a single integrated  
circuit.

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